

WATERSHED MANAGEMENT

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July 2002

Deep Creek, Jefferson Watershed Groups To Receive Stewardship Awards

The Deep Creek Watershed Group and Jefferson River Watershed Council will receive the 2002 Watershed Stewardship Awards. Lt. Governor Karl Ohs will present the awards in a ceremony July 23 at the State Capitol. Deep Creek is one of only a few Missouri River tributaries between Toston Dam and Canyon Ferry Reservoir that provides trout spawning and rearing habitat.

The Deep Creek Watershed Group traces its origins to a 1991 landowner meeting sponsored by the Broadwater Conservation District and Broadwater Stream and Lake Committee. A Plan of Work and Education Plan were developed in 1992.

In 1996 the U.S. Environmental Protection Agency approved a Total Maximum Daily Load plan for Deep Creek. This was the first nonpoint source TMDL approved for Montana. The TMDL approval brought additional resources to the restoration effort and created a long term monitoring strategy to track results.

Monitoring in 1999 showed that restoration efforts on private lands improved fish habitat and increased migrant trout populations. Sediment, primarily from bank erosion, was reduced by 68 percent resulting in enhanced spawning beds for fish. The quality and quantity of riparian vegetation is increasing while

better irrigation management is augmenting stream flows.

JRWC Based on Consensus

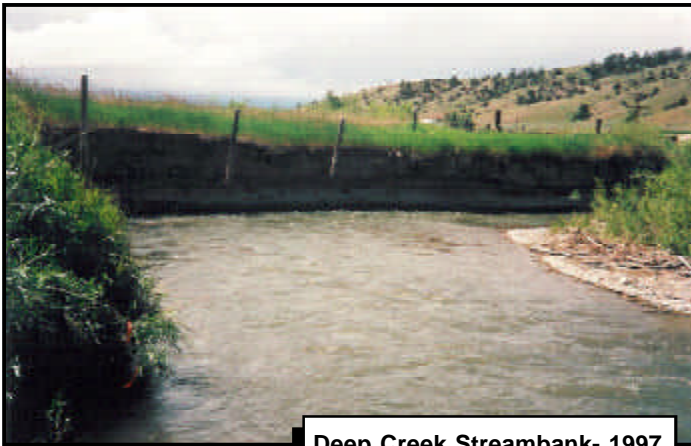
The Jefferson River Watershed Council was organized in the spring of 1999 to address low stream flows and declining trout popula-

Montana Watershed Coordination Council Quarterly Meeting July 23, 2002

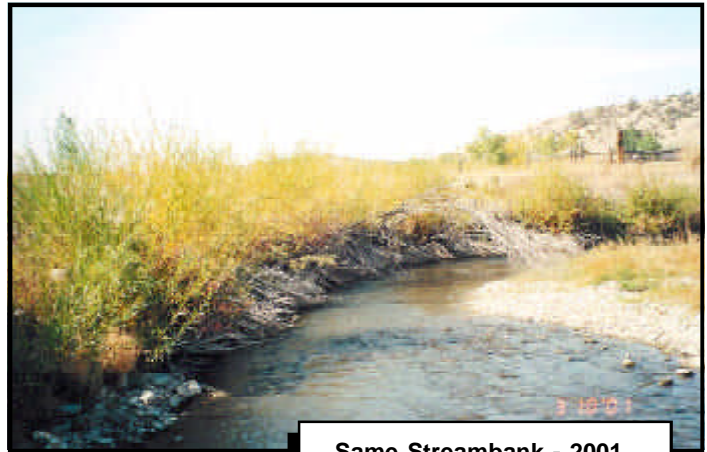
- 9:00 Introductions & Announcements**
Dept of Environmental Quality
1520 East Sixth Ave — Room 111
- 9:15 TMDL Schedule Changes**
—Bob Raisch, DEQ
- 9:30 Presentations by recipients of the 2001 Montana Watershed Stewardship Award**
- 9:35 Deep Creek Watershed Group**
- 10:15 Jefferson River Watershed Council**
- 11:00 Award Ceremony with
Lt. Governor Karl Ohs
North steps — State Capitol Building**
- 11:30 Picnic Lunch on the Capitol Lawn**
- 1:00 Review Annual Work Plan**
Dept of Environmental Quality
1520 East Sixth Ave — Room 111
- 1:30 Work Group Reports**
- 3:00 Adjourn**

Luncheon RSVP — Please contact :

Jennifer Dwyer at jendwyer@montana.net
or call 406-994-0251 by Friday, July 19.
Lunch cost is \$7. You may pay at the door.



Deep Creek Streambank- 1997



Same Streambank - 2001

tions. The council includes farmers, ranchers, fishermen, outfitters, irrigation companies, businesses and local government officials. Several state and federal agencies provide technical assistance. A consensus process governs the council.

In the summer of 2000 the council developed and implemented a drought management plan. The objective of the voluntary plan is to reduce resource damage and aid in the equitable distribution of water resources during critical times. The plan was refined and successfully implemented in 2001. When flows in the river drop below 250 cubic feet per second municipalities and irrigators are urged to reduce water consumption while Montana Fish, Wildlife and Parks evaluates the necessity to close fishing on the river. The Jefferson council coordinates with the Big Hole Watershed Committee in the implementation of the drought plan.

Twenty-six Jefferson valley landowners have been working with the National Center for Appropriate Technology (NCAT) in partnership with the council to improve irrigation efficiency practices. The landowners are using state-of-the art soil moisture monitoring systems that enable them to track the movement of water through their soils.

The council has applied for funds to map and treat weed infestations in the watershed.

A 2002 319 grant will fund water quality data collection and evaluation; implement a seepage loss study of three large irrigation canals; support the irrigation efficiency program; and identify and address nonpoint pollution sources.

Lt. Governor Ohs will present the Watershed Stewardship Awards at 11:00 a.m., July 23 on the north steps of the

State Capitol Building. The awards recognize innovative, locally-led approaches to restore and enhance Montana's watersheds. The awards are sponsored by the Montana Watershed Coordination Council, a statewide information and support network that advances voluntary local watershed work and helps build the capacity to get it done.

DEQ Seeks Comment on 303d List, TMDL Schedule

The Montana Department of Environmental Quality has released a draft **List of Impaired Water Bodies** for public comment. This document is known as the 303(d) list after the section of the Federal Clean Water Act that requires states to report rivers, lakes and streams that fail to support beneficial uses such as recreation, fisheries, aquatic life and water supply. Comments will be accepted until 5:00 p.m., August 5, 2002.

Included in the 303(d) report are proposed schedule changes for the development of Total Maximum Daily Loads (TMDLs). A TMDL is the total amount of pollutant that a water body may receive from any source without violating water quality standards. Montana is under a court-mandated schedule to develop TMDLs for all water bodies on the 1996 303(d) list by May 2007. However, the schedule adopted by DEQ in November 2000 gives the department the flexibility to reschedule TMDL development to respond to contingencies. For example, the Powder and Tongue watersheds were advanced in the schedule to 2002 in order to respond to concerns about the water quality impacts of coalbed methane development. Table 1 lists the proposed changes in the TMDL schedule.

In June, DEQ and EPA signed a cooperative agreement to define the responsibilities and roles of each agency in the development of TMDL/water quality restoration plans. EPA agreed to take the lead in the development of TMDLs in the Lake Helena, Flathead Headwaters, Cut Bank-Two Medicine, Dearborn, Yaak, Tongue, Powder, Big Horn-Shoshone, Missouri Mainstem and Upper Madison Watershed Planning Areas. EPA recently hired Ron Steg, former supervisor of DEQ's Watershed Management Section, as the agency's TMDL coordinator for Montana.

The draft 2002 **303d List of Impaired Water Bodies** is accessible on the web at:

<http://nris.state.mt.us/wis/environet/DataBaseChoice.html>

Comments should be sent to:

303(d) List Coordinator
Department of Environmental Quality
2209 Phoenix Ave
PO Box 200901
Helena, MT 59620

TABLE 1: TMDL SCHEDULE CHANGES

Watershed	Current Schedule	Proposed Change
Benton Lake	2002	2003
Upper Gallatin	2007	2005
St. Regis	2002	2003
Upper Middle Musselshell	2002	2006
Big Spring	2002	2003
Nine Mile	2003	2004
Big Horn Shoshone	2003	2005
Judith Arrow	2003	2005
Big Otter	2003	2007
Lower Gallatin	2003	2007
Shields	2004	2005
Upper Smith	2004	2005
Upper Lolo	2005	2002
Big Creek (N. Flathead)	2003	2002
Tongue	2005	2002
Powder	2006	2002
Prospect	2007	2003
Upper Madison	2005	2003
Bobtail	2007	2004
O'Fallon	2005	2004
Grave/Therault Creeks	2005	2004

2003 319 Water Quality Grant Schedule Announced

The Montana Department of Environmental Quality has released application guidelines for 2003 water quality grants. Public agencies and private nonprofit organizations are eligible to apply. Section 319 of the Federal Clean Water Act created the grant program to help states support and implement nonpoint source management programs. A detailed Request for Proposals and 319 Guidance Document are available on DEQ's website:

<http://www.deq.state.mt.us/index.asp>

The 319 program funds three types of projects:

- Projects that address water quality impairments on a watershed basis;
- Projects that focus on nonpoint source pollution of groundwater; and
- Nonpoint source information and education projects.

Projects should address rivers, lakes and streams on Montana's 303(d) list of impaired water bodies. The 303(d) list is accessible at:

<http://nris.state.mt.us/wis/environet/DataBaseChoice.html>

Projects should try to involve all affected stakeholders and natural resource agencies and organizations that address water quality issues. This approach will increase the impact of the project and avoid duplication of efforts. Watershed projects require 30 percent nonfederal match while ground-water and education/information projects require 40 percent. Match may be cash or in-kind goods and services.

Bonus points are awarded for projects that address impaired water bodies scheduled for TMDL development 2003-2005. A TMDL or Total Maximum Daily Load is the total amount of pollutant that a water body can receive from all sources without exceeding water quality standards. A TMDL is a component of a water quality restoration plan that also includes load allocations, public involvement and restoration and monitoring strategies. In response to a federal judicial order DEQ developed a schedule to complete all necessary TMDLs for water bodies on the 1996 303(d) list by 2007. The schedule is incorporated in the state's **Nonpoint Source Management Plan**.

Potential project sponsors are encouraged to contact DEQ staff prior to developing 319 proposals. The deadline for draft proposals is 5:00 p.m., January 3, 2003. By January 17, DEQ staff will provide sponsors with comments and

suggestions to improve their proposals. Revised proposals are due February 7. In late February the Water Activities Work Group of the Montana Watershed Coordination Council will review and rank the proposals. The review process includes a 15 minute opportunity for sponsors to summarize their proposals and respond to questions from the committee. The work group represents state and federal resource agencies, conservation districts, water quality districts, watershed groups and forestry, agriculture and conservation organizations.

In late March, DEQ will submit recommendations for funding to the U.S. Environmental Protection Agency. The department's goal is to have 319 funds available to project sponsors by mid-June.

A printed copy of the RFP and guidance may be obtained by calling Robin Rung (406) 444-6756.

319 Workshops

DEQ's Watershed Management Section is hosting six workshops to help applicants apply for and administer 319 grants. These workshops will be:

July 22 — HELENA - 10:00 a.m. - 4:00 p.m.

Dept. of Environmental Quality
1520 Sixth Avenue — Room 35

July 30 — LEWISTOWN - 9:00 a.m. - 4:00 p.m.

Yogo Inn, 211 E. Main

July 31 — GLASGOW - 9:00 a.m. - 4:00 p.m.

Fish, Wildlife & Parks Headquarters, Highway 2

August 1 — MILES CITY - 9:00 a.m. - 4:00 p.m.

Fish, Wildlife & Parks Headquarters
Industrial Site West

August 6 — LIVINGSTON - 9:00 a.m. - 4:00 p.m.

West Meeting Room, City-County Building

August 9 — POLSON - 9:00 a.m. - 4:00 p.m.

City Library public meeting room

All workshops, except Helena, will begin at 9:00 a.m. and conclude by 4:00 p.m. The Helena workshop will begin at 10:00 a.m. For more information contact Jim Bauermeister (406) 444-6771

jbauermeister@state.mt.us

DEQ Announces 319 Grants

The Montana Department of Environmental Quality and U.S. Environmental Protection Agency have awarded water quality grants totaling \$1,883,440 to 21 conservation districts, watershed groups and other agencies and organizations. "319" refers to the section of the Federal Clean Water Act that created the grant program to help states address nonpoint source water pollution. The 2002 projects are:

Ambrose-Three Mile Watershed Project sponsored by the Tri-State Water Quality Council— \$38,500 to fund the initial stages of TMDL development including completing watershed assessments, quantifying pollutant loads and determining their sources, setting targets for water quality, instituting public education efforts, developing a restoration/implementation plan, and evaluating these efforts.

Hydrogeologic Characterization of Acid Mine

Discharge along Belt Creek sponsored by City of Belt— \$108,461 to reduce or eliminate acid mine

discharge that is affecting surface and ground water quality of the Belt Creek drainage.

Stage Discharge Gauging Addition to Bitterroot

Nutrient Sampling Project sponsored by Tri-State

Water Quality Council— \$24,816 to create a volunteer monitoring program to record flows on the Bitterroot River.

East Deer Lodge Valley Watershed Project

sponsored by the Watershed Restoration Coalition of the Upper Clark Fork in association with Deer Lodge Valley Conservation District — \$87,000 to characterize the biological, chemical, and physical conditions of tributaries in the East Deer Lodge Valley Watershed Project. The data will be used for restoration planning and TMDL development.

Assessment of Airborne Nutrient Load and

Implementation of Voluntary Monitoring sponsored by

Flathead Basin Commission— \$125,000 to support the Flathead Lake Voluntary Nutrient Reduction Strategy/ TMDL effort. Specific goals include: 1) assess the airborne nutrient load into Flathead Lake; 2) begin allocation of the airborne nutrient load and define actions to reduce the load; and 3) implement the Voluntary Monitoring Program for two years and summarize findings.

Haskill Basin Watershed Project

sponsored by Flathead Conservation District— \$50,000 to 1) fund a comprehensive watershed assessment including stream, fish habitat, and sediment source surveys; 2) provide the Haskill Basin Council with recommendations for watershed

and stream and habitat restoration activities; and, 3) fund stream restoration work, public education, monitoring, coordination/ administration and development of a comprehensive watershed management plan for the drainage.

A Watershed-Based Approach to Better Irrigation

Management sponsored by the National Center for Appropriate Technology (NCAT)— \$86,213 to revise and reprint *The Montana Irrigator's Pocket Guide* and expand an innovative watershed-based approach to irrigation management.

Jefferson River Watershed Project sponsored by Jefferson Valley Conservation District—\$158,000 to 1) assess physical and biological components of the watershed in order to guide future data collection and identify TMDL targets; 2) identify irrigation conveyance inefficiencies and initiate a seepage loss mitigation demonstration project; 3) identify riparian vegetation project needs and implement up to three restoration projects to demonstrate the multiple benefits of riparian health.

Marias River Watershed Project sponsored by Liberty County Conservation District— \$53,250 to compile and evaluate data to establish baseline conditions, characterize ground water/surface water interaction, and focus efforts for subsequent data collection and planning.

Middle Blackfoot and Blackfoot Headwaters Watershed Habitat and Water Quality Restoration

Project sponsored by Blackfoot Challenge— \$274,280 to: 1) create, coordinate and integrate a Habitat and Water Quality Restoration (HWQR) process in the Middle Blackfoot; 2) develop a HWQR plan that meets DEQ/EPA TMDL requirements; 3) tie Blackfoot watershed projects to the TMDL process and plan; 4) provide education and outreach to basin residents and ensure stakeholder and public involvement in the HWQR process; and 5) collect and analyze sediment, nutrient and metals data for the Blackfoot Headwaters TMDLs.

Water Monitoring and Community Education in the Middle Clark Fork Watershed sponsored by Watershed Education Network (WEN)— \$86,410 to 1) Expand WEN's Water Monitoring Program in the Missoula Valley by: a) developing a more comprehensive training program for volunteers and teachers; b) expanding WEN's School Water Monitoring Program to include pre- and post-field trip visits to participating classrooms; c) increasing support for current sites in the Citizen Monitoring program; and d) establishing new school and/or citizen monitoring with priority given to creeks on the 303(d) list of impaired water bodies.

2) Develop public education and outreach programs to increase people's awareness and understanding of nonpoint source pollution and other water quality topics; increase public participation in activities that improve local watershed health and riparian habitats.

Middle Milk River Demonstration Project sponsored by Milk River International Alliance— \$24,820 to 1) demonstrate effective, affordable ways for farmers and ranchers to reduce or eliminate stream bank erosion caused by watering stock; 2) demonstrate effective, affordable methods for farmers to reduce discharge of livestock waste into stream; 3) raise local awareness of water quality issues and begin the process to develop a water quality restoration plan for the watershed.

Assessment of NPS Impacts in the Middle Yellowstone Alluvial Valley sponsored by Yellowstone Conservation District—\$79,990 to track hydrologic and water quality changes due to urbanization. Surface water monitoring will consist of measuring level, flow, temperature, specific conductance, pH, and turbidity six times per year.

Southern Crazy Mountain Watershed Assessment

sponsored by Park Conservation District— \$80,850 to 1) improve and maintain riparian areas, wetlands, and adjacent lands, and (2) optimize streamflows within the watershed to maximize benefits for agricultural users, fish, and wildlife.

St. Regis Watershed TMDL sponsored by Mineral County Conservation District— \$66,500 to coordinate and develop a comprehensive TMDL water quality restoration plan for the St. Regis watershed planning area.

Swift Creek Watershed Project sponsored by Whitefish County Water & Sewer District— \$44,000 to review existing data and fund new assessment work, public education, monitoring, coordination/administration and development of an interim water quality management plan for the drainage.

Upper Shields Water Quality Restoration Plan

Development sponsored by Park Conservation District— \$81,400 to 1) improve the health and condition of the Upper Shields River Watershed; 2) maintain or restore existing and potential populations of Yellowstone Cutthroat Trout and other significant fish species in the Upper Shields River Watershed; and 3) optimize streamflows within the watershed to maximize benefits for fish, wildlife, and agricultural users.

Development of River Management Recommendations sponsored by the Governor's Upper Yellowstone River Task Force— \$122,200 to develop a set of publicly-supported river corridor management recommendations that address potential cumulative effects of channel modification.

Montana Volunteer Water Monitoring Project

sponsored by Montana Watercourse— \$128,000 to (1) support the Montana Volunteer Water Monitoring Project by providing salary, benefits, and operations support; (2) conduct five training workshops for volunteer groups; (3) coordinate and facilitate a training/retreat for members of the Montana Water Monitoring Coalition; (4) provide support for community-based and school-based monitoring groups in Montana via mini-grants and training; (5) disseminate monitoring information state and region-wide; and (6) publicly recognize and promote volunteer water monitoring projects in Montana.

Watershed Education Project sponsored by Montana Association of Conservation Districts— \$63,950 to 1) provide financial and technical assistance to conservation districts, watershed groups, and other non-profit educational outreach organizations conducting a water quality and natural resource conservation youth field day or adult workshop; and 2) assist applicants in the planning and implementation of educational events. The project activities target two general audiences: 1) landowners, land managers, and decision makers; and 2) students grade K-12, their teachers, aides and parents.

Sun River Watershed TMDL/Water Quality Restoration Project sponsored by Cascade County Conservation District— \$99,800 to 1) produce and implement a water quality/TMDL plan; 2) improve land and irrigation water management with BMPs; and 3) monitor project implementation.

The Role of Volunteer Water Monitors

Throughout Montana volunteers are monitoring the water quality of rivers, lakes and streams. Water quality monitoring is done by watershed groups, conservation organizations, schools, youth groups and individual citizens. Volunteer monitoring increases awareness of water quality issues. Receiving the training to become a water quality monitor is probably the best way for citizens to learn about water quality and watershed health.

Most water quality monitoring involves basic calculations of pH, dissolved oxygen, and temperature as well as broad characterizations of aquatic life, water velocity and flow, streambed composition and riparian habitat. While exploring streams is educational—and fun—is the data collected by volunteers of any use in making water quality determinations?

Every two years the Department of Environmental Quality prepares a list of water bodies that fail to meet water quality standards. This report is known as the “303(d) List.” It is named after the section of the Federal Clean Water Act that requires states to report water bodies that fail to fully support beneficial uses such as recreation, fisheries and water supply.

The Montana Water Quality Act requires DEQ to use “sufficient credible data” in making water quality impairment decisions. DEQ is directed to use “all currently available data, including information or data obtained from federal, state, and local agencies, private entities, or individuals with an interest in water quality protection.” DEQ has developed guidelines to assess the validity and reliability of this data. When the department assesses biological data to determine if a stream is supporting aquatic life, it assigns it a score from one to four. Data that is not collected under the supervision of a qualified professional or is imprecise or limited in scope is assigned one point. Data collected using appropriate protocols by people with limited training under professional oversight is assigned two points. As the data becomes more precise, comprehensive and professional, it is assigned more points. The department requires a total of six data points to make a water quality determination. DEQ has developed similar tables for chemical and habitat determinations which can be reviewed at: www.deq.state.mt.us/ppa/mdm/SCD/scdindex.asp

To be useful, volunteer-collected data must contain this auxiliary information:

Who collected the data? What was their education, experience and training? Were the volunteers under the oversight of a qualified professional?

Where was the data collected? Can the collection point be accurately pinpointed and found again? Does the collection point reflect the general condition of the stream segment or lake or is it unique (such as at the outlet of a sewer pipe)?

When was the data collected? Was there anything unusual about the day it was collected? Was it the hottest day of the year or immediately following a flash flood?

How was the data collected? What methods were used? Was the equipment properly calibrated and suitable to the collection technique? Were the appropriate scientific protocols followed?

Why was the data collected? Objectivity is a basic precept of science. However, data may sometimes be collected to prove that a stream is impaired (or unimpaired).



Volunteer Water Monitors at Work

monitoring strategy to track the success of the TMDL. Monitoring activities that match the experience, training and interest of the volunteers can be identified in the plan.

Montana is a huge state with valuable and abundant water resources. DEQ lacks the resources to adequately monitor every river, lake and stream on a regular basis (more than half the state's waters lack sufficient credible data to make water quality determinations). The department also lacks the resources to track implementation of approved restoration plans. Well-trained, committed, conscientious volunteers have an important role to play in protecting and restoring water quality in Montana.

The Montana Volunteer Water Monitoring Project has trained hundreds of volunteers to perform basic water quality monitoring. The project has developed forms that answer most of the who, what, when, where and how questions. These forms are included in the center's ***Handbook for Volunteer Water Monitoring in Montana***. The project's website is:

<http://www.nris.state.mt.us/wis/volwatmon.htm>

The Department of Environmental Quality is required to develop Total Maximum Daily Load (TMDL) plans for rivers, lakes and streams on the 303(d) list. A TMDL is the *total amount of pollutant that a water body may receive from all sources without exceeding water quality standards*. A TMDL may also be defined as *a reduction in pollutant loading that results in meeting water quality standards*.

What is the role of volunteer water quality monitors in the TMDL planning process? State law requires DEQ to consult with watershed groups and conservation district during all phases of water quality restoration planning. Watershed groups should represent all local land and water interests including volunteer monitors. Volunteer monitors who are familiar with the watershed can provide the department with useful information about causes and sources of impairment and advise in the establishment of water quality targets and load allocations.

But perhaps the most important and appropriate role for volunteers is to assist in developing and implementing a

COTTONWOODS— King of the Riparian Forest

Throughout much of Montana cottonwoods play an important role in protecting water quality, preventing flood damage and providing wildlife habitat. Cottonwoods are often the *keystone species* in a riparian area. That is, *a species that plays an important role in the overall structure and dynamic relationship within the biotic community*.



Montana has three native cottonwood species:

Black cottonwood (*Populus trichocarpa*) is the only species west of the continental divide. It is also found along mountain and foothill streams and lakes on the east slope of the Rocky Mountains. New bark is smooth and grayish-green. Mature bark is gray and deeply furrowed. The leaves are deep, shiny green above and silvery-white below. Black cottonwood grows 80-120 feet tall.

Plains cottonwood (*P. deltoides*) is found near water on the Great Plains. It grows 60-90 feet tall and 6-7 feet in diameter. It has large, broadly triangular leaves with toothed margins. In contrast to black cottonwood, the leaf stalk is flat, not round.

Narrowleaf cottonwood (*p. angustifolia*) occupies a middle territory between the black and plains species. It

often overlaps with both. This cottonwood reaches 50-70 feet in height and has 2-6 inch long yellow-green leaves.

Cottonwoods are pioneer species. The tiny, wind-blown seeds germinate in the damp sediment left when floodwaters recede. If it doesn't die of drought, ice, grazing or subsequent floods, a cottonwood sapling will grow up to three feet a year rapidly stabilizing the flood prone area and shading the stream. Other tree and shrub species will sprout in the shade of the cottonwoods. The understory of a cottonwood forest may include currants, chokecherries, alders, roses, willows, red-osier dogwood and snowberry as well as miscellaneous grasses and forbs. Noxious weeds can't get established in the closed canopy of a healthy riparian forest.

Cottonwoods don't do well in the shade and are relatively short-lived (60-100 years). Shade tolerant species will eventually supplant them on stable sites. In the mountains conifers succeed black cottonwood. Plains cottonwood is replaced by juniper, green ash or box elder.

However, left to their own devices, most streams aren't stable over time. They tend to wander back and forth across a flood plain or valley. In Montana ice and floods play a major role in redirecting stream flows. A long, narrow forest of mature cottonwoods often marks a former stream channel.

The riparian forest provides food and shelter for deer, elk, moose, bear, and many other wildlife species. One third of Montana's 400 bird species utilize cottonwood groves. The spreading crown of a large cottonwood tree creates a platform for osprey, bald eagles and great blue herons to build stick nests on. Cottonwoods tend to die piece-meal, a branch at a time. Insects in dead or dying branches attract flickers, woodpeckers, nuthatches, and chickadees. The holes hammered by woodpeckers and flickers create housing for wood ducks, bluebirds, wrens and other songbirds. Riparian forests can be an oasis. When the surrounding prairie is dry and parched in late summer the riparian forest is still green and succulent. Plains cottonwood is often the only large tree for miles around.

Riparian forests can also provide shade, forage and winter protection for livestock. However, the riparian zone must be carefully monitored and managed to prevent livestock damage.

Like their relatives in the willow family, cottonwoods can be used as *biofilters* to remove nitrates and other pollutants from water.

For restoration work cottonwoods can be propagated from seed, soft and hardwood cuttings, layering or transplanted seedlings.

For a more complete description of the cottonwoods' role in protecting rivers, lakes and streams see **Classification and Management of Montana's Riparian and Wetland Sites** by Paul Hansen, et.al. Misc. Publication No. 54, School of Forestry, University of Montana, Missoula, 1995; available on the web at:

<http://www.revegetation.com/Documents/Montana.html>

Buffers Can Work Quickly to Protect Streams

Can a riparian buffer system produce measurable water quality and overall stream health improvement in a single year?

In some cases, the answer is yes, research at the Natural Resources Conservation Service Wetland Science Institute (WLI) shows.

Director Billy M. Teels said a WLI study is concentrating on about 40 sites enrolled in Virginia's Conservation Reserve Enhancement Program (CREP). The CREP was introduced in 2000 to achieve water quality improvements in the Chesapeake Bay and southern rivers in the state. In some specific cases, the research shows stream improvement in just a year.

"We've recorded improvements not only in water quality but also in the overall ecological health of the stream," Teels said.

Measurement Methods Explained

The Institute uses two key measurement tools. An Index of Biotic Integrity (IBI) assesses overall stream health using information from fish population samples. A Stream Visual Assessment Protocol (SVAP) measures physical characteristics such as stream channel condition, riparian width, presence of manure, water appearance and other factors. IBI and SVAP measurements taken before and after CREP practices were installed will help the institute gauge gains in stream health in future years. Forty different sites and reference areas have been identified.

Sites that respond almost immediately have certain characteristics. "If the site itself was pretty degraded and the upstream watershed is in pretty good condition, we're noticing improvements," Teels said. "I think it's rather



Photo Courtesy of Bitterroot Restoration
*A healthy buffer of sandbar willow, plains cottonwoods and red-osier dogwood
 on the Milk River near Glasgow.*

remarkable that we would get changes as quickly as we did in these situations.”

Practices used on those sites were riparian buffers and fencing to keep cattle out of the water. Teels said, “essentially, you had a site that was pretty disturbed. In these cases, cattle had access to the streams and there was runoff in the immediate vicinity.”

What about installing conservation practices on sites in degraded watersheds? Teels said, “If the watershed isn’t in good shape, it doesn’t matter what you do to the site.” Gains won’t be achieved in those areas unless whole segments of degraded watersheds are targeted.

Teels said, “The study might lead to helping us do a better job of selecting sites and evaluating the kinds of practices to be installed at those sites. But we want to run the study long enough to have stronger data.”

More information on WLI is available on the web at:

www.pwrc.usgs.gov/wli/

New DEQ Staff

The DEQ Watershed Management Section staff increased by three this spring:

Robert Ray, new section supervisor, comes from Silverthorne, Colorado where he was Watershed Services Program Director for the Northwest Colorado Council of Governments. He was responsible for Section 208 water quality planning for several counties. His planning duties included municipal wastewater, nutrients, and heavy metals from historical mining. Robert has also worked for the City of Arvada, Colorado as a water quality analyst and the state of Virginia where he was in charge of the lake water

quality, fish tissue and aquatic plants programs. Robert has a bachelor’s degree in biology and a masters in marine science. He replaces Ron Steg who is now EPA’s TMDL coordinator for Montana.

Robin Rung of Helena fills the new nonpoint source grants coordinator position. His primary duty will be to administer the ‘319’ program. Robin has spent the past two years responding to Requests for Proposals and managing contracts for a private consulting firm in Hamilton. He has almost 10 years of experience in state government working on grants, contracts, requests for proposals and purchasing. He spent several years with Fish, Wildlife and Parks managing Requests for Proposals and subsequent contracts including some water quality restoration projects funded by DEQ.

Kathy Stephens of Bozeman has accepted a temporary position to help DEQ catch up on entering data into EPA’s Grant Reporting and Tracking System (GRTS). Kathy is the former Director of Information Services at the Montana Water Center where she managed the Montana Water website and administered grants.

TRANSITION: Bob Raisch will retire as chief of DEQ’s Resource Protection Bureau July 23. Bob Bukantis is slated to

be named chief of a new water quality bureau that will incorporate the watershed planning and water quality monitoring and standards sections, as well as some technical support staff.

Watershed Projects Database

A web catalog of watershed projects is now accessible at the Montana Water website:

<http://water.montana.edu/watersheds/WsPro/default.asp>

The database was developed in response to a recommendation by the Montana Watershed Coordination Council's Linking Work Group. The purpose of the database is to enable resource managers to quickly and easily identify restoration projects in specific watersheds. The web catalog will improve coordination of restoration efforts and prevent duplication of efforts. The database includes information about 319, Future Fisheries and EQIP (Environmental Quality Incentives Program) projects. The database project was funded with a 2000 Section 319 Information and Education grant.

*Our goal is to protect and restore water quality through the
voluntary implementation of best management practices identified in
science based, community supported watershed plans.*

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